

REMARKS

In view of the above amendments and following remarks, further consideration of the present application is respectfully requested.

It is noted that Claims 21-31 have been added. Accordingly, it is submitted that Claims 1-12 and 17-31 are currently pending in this application.

The Applicants note that newly added independent Claims 21, 22, and 23 have been drafted so as to generally correspond to the invention claimed in pending Claims 11, 17, and 19, respectively, but so as to avoid being interpreted as means/step-plus-function type claims under 35 U.S.C. § 112, sixth paragraph.

The Applicants would like to thank Examiner Aravind Moorthy and Primary Examiner Christopher Revak for conducting a personal interview with the Applicants on May 19, 2004 at the United States Patent and Trademark Office. During the personal interview, the Applicants set forth arguments distinguishing the present invention, as particularly recited in each of the independent claims, over the *Witt et al.* reference relied upon by the Examiner. It is noted that during the personal interview, the Examiner indicated that the arguments presented by the Applicants appeared to be persuasive and requested that the Applicants include the arguments in this formal response so that the Examiner could provide further consideration. Accordingly, as requested by the Examiner and as mentioned in the Interview Summary form PTO-413, provided next is a Substance of the Interview distinguishing the claimed invention over the *Witt et al.* reference.

Initially, it is noted that the Examiner has rejected each of independent Claims 1, 11, 12, 17, and 19 under 35 U.S.C. § 102(e) as being anticipated by *Witt et al.* (U.S. Patent No. 5,745,571).

The Applicants respectfully traverse the Examiner's aforementioned prior art rejection and submit that the present invention, at least as claimed in each of independent Claims 1, 11, 12, 27, 19, and 21-23, clearly patentably distinguishes over the *Witt et al.* reference relied upon by the Examiner for at least the following reasons which were discussed during the aforementioned personal interview conducted on May 19, 2004.

First, a fundamental difference between the present invention as claimed and the teachings of the *Witt et al.* reference is that the present invention provides for mutual authentication, whereas the *Witt et al.* reference discloses one-way authentication. According to the present invention, mutual authentication is performed between a storage medium and an access device. Particularly, as recited in each of independent Claims 1, 11, 12, 17, 19, and 21-23 of the present application, the access device is operable to authenticate whether the storage device is authorized and, likewise, the storage device is operable to authenticate whether the access device is authorized, thereby providing mutual authentication.

The *Witt et al.* reference, on the other hand, discloses one-way authentication for computer network protection using cryptographic sealing software agents and objects. Particularly, as illustrated in Figure 2 and as discussed in Column 5 (Lines 29-44) of the *Witt et al.* reference, the disclosed invention merely utilizes a conventional one-way public/private key authentication protocol which implements a random number exchange using random numbers R1 and R2 [see Column 5 (Lines 35-43)]. A message M is successfully authenticated in the one-way manner if a crypto seal is determined to correctly know its private key [see Column 5 (Lines 43-44)].

Thus, the Applicants submit that the *Witt et al.* reference clearly fails to disclose or suggest performing mutual authentication between a storage medium and an access device, as

clearly recited in each of independent Claims 1, 11, 12, 17, 19, and 21-23 of the present application.

Next, according to the present invention as recited in each of independent Claims 1, 11, 12, 17, 19, and 21-23, and as illustrated in Figures 3 and 4 of the present application, scrambled access information generated by scrambling access information which shows the area is transmitted to a storage medium and the storage medium is authenticated according to a challenge-response authentication protocol using the scrambled access information. As a result, since access information showing the area to be accessed in the storage medium is used during authentication and is readily available prior to data transfer, data transfer can be quickly started upon successful completion of the authentication. Moreover, a high level of security is ensured due to the fact that the authentication procedure scrambles and uses the access information which shows the area, thereby preventing tampering or modification of the access information.

The *Witt et al.* reference, on the other hand, merely discloses a one-way authentication procedure for authenticating a Message denoted as "M" [see Column 5 (Lines 29-44) and Figure 2]. The Message "M" described in the authentication procedure of the *Witt et al.* reference is the actual data being transferred and, unlike the novel feature of the present invention as discussed above, the Message "M" clearly does not show the area to be accessed. It is further noted that the crypto seals of the *Witt et al.* reference are merely software agents or objects which are cryptographically sealed for protection from external modification [see Column 3 (Lines 25-27 and 44-46)].

Thus, it is strongly submitted that the *Witt et al.* reference fails to disclose or suggest transmitting scrambled access information which shows the area to a storage medium and authenticating the storage medium according to a challenge-response authentication protocol

using the scrambled access information, as clearly recited in each of independent Claims 1, 11, 12, 17, 19, and 21-23 of the present application.

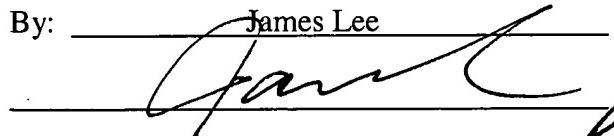
Furthermore, it is submitted that the *Witt et al.* reference clearly fails to disclose or suggest that the access information comprises address and data size information, as is clearly recited in each of newly added dependent Claims 24-31 of the present application.

In view of the foregoing, it is submitted that the present invention as claimed in each of independent Claims 1, 11, 12, 17, 19, and 21-23, as well as Claims 2-10, 18, 20, and 24-31 dependent thereon, is clearly allowable, and the Examiner is kindly requested to promptly pass this case to issuance.

If the Examiner believes that a telephone interview will help further the prosecution of this case, he is respectfully requested to contact the undersigned attorney at the listed telephone number.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on June 9, 2004.

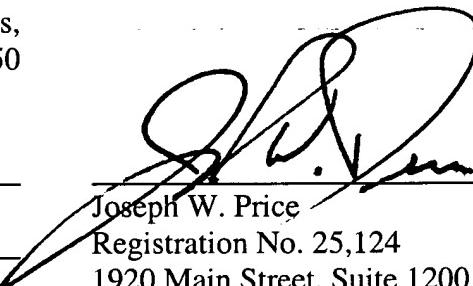
By: _____ James Lee


Signature

Dated: June 9, 2004

Very truly yours,

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